

**Zoological Results of the British Speleological Expedition to Papua New Guinea 1975. 11.
Acariformes (Prostigmata): Smarididae
(*Trichosmaris papuana* sp.n.)**

Petar BERON

Abstract. Description of *Trichosmaris papuana* sp. n. (Acari, Erythraeoidea, Smarididae) from Papua New Guinea (3100 m). The genus *Trichosmaris* was known only from America (Guatemala, USA and Mexico). Notes on Erythraeoidea of Papua New Guinea.

Key words: Acari, Erythraeoidea, Smarididae, *Trichosmaris*, Papua New Guinea

As a member of the British Speleological Expedition to Papua New Guinea (1975) I had the chance to collect also some Acari in and outside caves. Among them, several Erythraeoid mites proved to be new for the science.

The material has been collected in New Guinea and New Ireland in the following localities:

New Guinea (PNG):

1. Finim Tel (Western Province). Plateau covered with rainforest, alt. 2260 - 2400 m.
2. Mount Fugilil (Western Province). Summit above the plateau of Finim Tel, the upper part covered with moss forest, alt. 2800 - 3100 m.
3. Telefomin - town in West Sepik Province, rain forest, alt. 1600 -1700 m.
4. Bahrmann Mountains - mountain pass in West Sepik Prov., not far from Finim Tel, alt. 2260 - 2500 m.
5. Bultem - village in Western Province, rain forest at the basis of Hindenburg Wall.
6. Tifalmin - village in West Sepik, alt. 1700 m.
7. Cave Ogon 1, v. Goglme, Simbu (Chimbu) Province.
8. Lae - town in Morobe Prov., rain forest on the sea shore.
9. Mount Wilhelm - from Lake Pinde (3480 m) to the summit (4600 m, the highest point of Papua New Guinea).

10. Urapmin - village in West Sepik, rain forest.

New Ireland: 11. Kaluan 2; 12. Belik Plantation; 13. Kolonoboi; 14. Lenkamin.

Detailed information about the area of work of the British Speleological Expedition can be found in BROOK D., Ed. (1976). The families Smarididae and Erythraeidae are not entirely unknown in New Guinea and the Bismarck Archipelago, but many of the descriptions are old and need revision. Certainly, the rich tropical environment of these islands harbors plenty of undescribed mites. The studies on Erythraeoidea in Irian Jaia and the territory of today's Papua New Guinea started in the 19th century.

1897 - From Friedrich Wilhelm Hafen and Erima (East New Guinea) G. Canestrini describes the new species *Caeculisoma claviger*, *Smaris neoguineana*, *Rhyncholophus brevipilis* and *Rh. subtilipes*.

1898 - In his list of 80 species of mites from New Guinea Canestrini includes also 11 sp. of Erythraeoidea, only *Rhyncholophus latus* being new for the science. In this list we can see some species, the presence of which in New Guinea is quite unlikely (the Southamerican *Caeculisoma tuberculatum* Berlese and the European *Rhyncholophus* - now *Leptus* - *nemorum* Koch and *Rhyncholophus* - now *Leptus* - *calvescens* Berlese).

1898 - From Ralum (New Britain) Kramer describes "*Rhyncholophus*" *poriferus*. In the same paper also some European species, now considered members of *Leptus*, are listed.

1905 - From New Guinea Oudemans describes "*Erythraeus*" *debeauforti* on ants (now *Leptus debeauforti*).

1908 - From New Guinea and New Britain Oudemans lists (p. 107-109) 12 species of Erythraeoidea.

1910 - Oudemans describes "*Erythraeus*" *volzi* (now *Leptus volzi*).

1941 - From New Guinea Gunther describes "*Belaustium*" (now *Abrolophus*) *novaeguineensis*.

The knowledge on Erythraeoidea of New Guinea is based mainly on the modern standards set by Southcott in the following papers:

1948 - *Clipeosoma copiolarum* Southcott from "Babiang, in the Aitape Region of New Guinea" and *Hauptmannia aitapensis* Southcott from the same area.

1966 - *Charletonia falcata* Southcott

1972 - *Callidosoma rostratum* Southcott.

1984 - *Leptus draco* Southcott

1993 - key of the *Leptus* species from Australia and New Guinea

1999 - Four new species of *Leptus* from New Guinea

Later HAITLINGER (1990) described *Leptus bogghoranus* from New Guinea.

List of the species belonging to Erythraeoidea from New Guinea and adjacent islands:

Fam. Smarididae
Subfam. Hirtiosomatinae

Trichosmaris papuana Beron, sp. n. - New Guinea
Clipeosoma copiolarium Southcott, 1948 - New Guinea

Fam. Erythraeidae
Subfam. Leptinae (all from New Guinea)

Leptus debeauforti Oudemans, 1905, *L. boggohoranus* Haitlinger, 1990, *L. draco* Southcott, 1984, *L. calcar* Southcott, 1999, *L. lorarius* Southcott, 1999, *L. triacanthus* Southcott, 1999, *L. cheesmanae* Southcott, 1999, *L. scutellatus* Southcott, 1999

Subfam. Callidosomatinae

Caeculisoma mouldsi Southcott, 1988 - New Guinea
Caeculisoma sp.n. 1 Beron, in print - New Ireland
Caeculisoma sp.n. 2 Beron, in print - New Ireland
Caeculisoma sp.n. 3 Beron, in print - New Ireland
C. darwiniense Southcott, 1961- Australia and New Guinea
Charletonia falcata Southcott, 1966 - New Guinea
Ch. volzi (Oudemans, 1905) - New Guinea
Callidosoma rostratum Southcott, 1972 - New Guinea
Hauptmannia aitapensis Southcott, 1948 - New Guinea
Abrolophus novaeguineensis (Gunther, 1941) - New Guinea

The following taxa, published by CANESTRINI (1897, 1898) and KRAMER (1898), are doubtful, inadequately described or unlikely to live in Melanesia: *Smaris neoguineana* Canestrini, 1897; "*Rhyncholophus*" *brevipalpis* Canestrini, 1897; *Rh. subtilipes* Canestrini, 1897; *Rh. nemorum* C.L. Koch, 1836; *Rh. calvescens* Berlese, 1888; *Rh. sagittatus* Canestrini, 1898; *Rh. latus* Canestrini, 1898; *Rh. poriferus* Kramer, 1898.

The present paper also gives a description of a new species of *Trichosmaris* (Smarididae), a genus known so far only from North America.

Fam. Smarididae
Subfam. Hirstiosomatinae
Genus Trichosmaris Southcott

The genus *Trichosmaris* Southcott, 1963 has been created to include the taxa *T. dispar* Southcott, 1963, *T. d. dentella* Southcott, 1963 and *T. jacoti* (Southcott, 1946) from Guatemala, U.S.A. and Mexico. The new species from New Guinea extends considerably the areal of the genus.

Trichosmaris papuana sp. n.

Material: 1 ♂ (holotype), New Guinea, Western Province, top of Mt. Fugilil, 3100 m, 30.9.1975, P. Beron leg.

Description (Fig.1): Crista long 378 μm . On the anterior sensillary area 2 sensillae, thick and ciliated, similar to those of *T. jacoti*, and 5(?) short and ciliated ordinary setae, similar to dorsal setae (*T. jacoti* has 10 such setae, much more elongated, *T. dispar* has 18 more elongated setae).

Anterior sensillae of *T. dispar* Southcott are more irregularly ciliated (distal half different from proximal). Anterior sensilla of *T. papuana* n. sp. 35 μm long, posterior sensilla 60 μm long (Pars clavata 42 μm , flagellum 18 μm).

Deposition of type: National Museum of Natural History, Sofia.



Fig. 1. *Trichosmaris papuana* sp. n. - dorsal view

References

- BERON P. In print. Zoological Results of the British Speleological Expedition to Papua New Guinea 1975. 12. Acariformes (Prostigmata): Erythraeidae (*Caeculisoma* Berlese). - *Historia naturalis bulgarica*, 16.
- BERON P. In print. *Acarorum Catalogus* 1. Superfam. Calyptostomatoidea and Erythraeoidea.
- BROOK D. (Ed.). 1976. The British New Guinea Speleological Expedition, 1975. - *Trans. of the British Cave Res. Assoc.*, 3 (3-4): 115-243.
- CANESTRINI G. 1897. Nuovi acaroidi della N. Guinea. - *Termeszetr. Fuz.*, 20: 461-474.
- CANESTRINI G. 1898. Nuovi acaroidi della N. Guinea. (Terza serie). - *Termeszetr. Fuz.*, 21: 480-487.
- GUNTHER C.E.M. 1941. An erythraeid mite from New Guinea (Acarina: Erythraeidae). - *Proc. Linn. Soc. N.S.W.*, 66 (3-4): 156.
- HAITLINGER R. 1990. Four new species of *Leptus* Latreille, 1796 (Acari, Prostigmata, Erythraeidae) from insects of Australia, New Guinea and Asia. - *Wiadomosci Parazytol.*, 36 (1-3): 47-53.
- KRAMER P. 1898. Neue Acariden aus Ralum (Bismarck-Archipel). - *Zool. Anz.*, 21: 419-422.
- OUDEMANS A. C. 1905. *Acarologische Aanteekeningen XVI*. - *Ent. Ber.*, Amsterdam, 1 (22): 216-218.
- OUDEMANS A. C. 1906. Acari. In: "Nova Guinea: Resultats de l' expédition scientifique néerlandaise à la Nouvelle-Guinée", 5 (1), Zoologie: 101-161.
- RAINBOW W. J. 1906. A synopsis of Australian Acarina. - *Rec. Aust. Mus.*, 6 (3): 145-193.
- SOUTHCOTT R. V. 1948. Larval Smarididae (Acarina) from Australia and New Guinea. - *Proc. Linn. Soc. N.S. Wales*, 72 (5-6): 252-264.
- SOUTHCOTT R. V. 1961a. Studies on the systematics and biology of the Erythraeoidea (Acarina), with a critical revision of the genera and subfamilies. - *Aust. J. Zool.*, 9 (3): 367-610.
- SOUTHCOTT R. V. 1961b. Notes on the genus *Caeculisoma* (Acarina: Erythraeidae) with comments on the biology of the Erythraeoidea. - *Trans. Roy. Soc. S. Aust.*, 84: 173-178.
- SOUTHCOTT R. V. 1963. The Smarididae (Acarina) of North and Central America and some other countries. - *Trans. Roy. Soc. S. Aust.*, 86: 159-245.
- SOUTHCOTT R. V. 1966. Revision of the genus *Charletonia* Oudemans (Acarina: Erythraeidae). - *Australian J. Zool.*, 14 (4): 687-819.
- SOUTHCOTT R. V. 1972. Revision of the larvae of the tribe Callidosomatini (Acarina: Erythraeidae) with observations on post-larval instars. - *Austr. J. Zoology*, Suppl. Ser., 13: 1-84.
- SOUTHCOTT R. V. 1984. Acari from Operation Drake in New Guinea. 4. A new species of *Leptus* (Erythraeidae). - *Acarologia*, 25 (4): 351-358.
- SOUTHCOTT R. V. 1993. Larvae of *Leptus* (Acarina: Erythraeidae) ectoparasitic on higher insects of Australia and New Guinea. - *Invertebrate Taxonomy*, 7: 1473-1550.
- SOUTHCOTT R. V. 1994. Two new larval Erythraeidae (Acarina) from Thailand, with keys to the larvae of *Leptus* for Asia and New Guinea, and world larvae of *Hauptmannia*. - *Steenstrupia*, 20 (6): 165-176.
- SOUTHCOTT R. V. 1999. Larvae of *Leptus* (Acarina: Erythraeidae), free-living or ectoparasitic on arachnids and lower insects of Australia and New Guinea, with descriptions of reared post-larval ins. - *Zool. J. Linn. Soc.*, 127: 113-276.

Received on 10.12.2002

Author's address:
Dr Petar Beron
National Museum of Natural History
Tsar Osvoboditel Blvd. 1
1000 Sofia, Bulgaria
E-mail: beron@mail.bg

**Зоологически резултати от Британската
спелеологична експедиция в Папуа Нова Гвинея 1975. 11.
Acariformes (Prostigmata): Smarididae
(*Trichosmaris papuana* sp.n.)**

Петър БЕРОН

(Р е з ю м е)

По време на работата си в Папуа Нова Гвинея през 1975 г. авторът е събрал представители на Erythraeoidea (Acariformes: Prostigmata). Между тях е установен един нов вид за науката: *Trichosmaris papuana* sp. n. (Smarididae, Hirstiosomatinae) от о. Нова Гвинея (3100 m). Това е третиият вид от род *Trichosmaris* Southcott. Родът е познат досега само от Гватемала, САЩ и Мексико.